

**PRE-CAFE REPORT
FOR
2017 MODEL YEAR
OF
KIA MOTORS CORPORATION**

- Passenger Cars -



NOTE : THIS REPORT CONTAINS [REDACTED] INFORMATION.

THE PRODUCTION VOLUME IS [REDACTED] INFORMATION
AND THIS INFORMATION IS DEEMED BY HMC TO BE EXEMPT
FROM DISCLOSURE UNDER 5 U.S.C. 552(B)(4) AND
49 U.S.C 32910(c).

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Note * : This section contains [REDACTED] information

I. Introduction

As required by 49 CFR Part 537.9, estimated fuel economy values for Rio, Rio ECO, Forte, Forte5, Forte Koup, Soul, Soul Electric, Niro, Niro FE, Niro Touring, Optima, Optima FE, Optima hybrid, Optima plug-in hybrid, Sportage FWD, Sportage FE FWD, Sorento AWD, Sorento FWD, Cadenza, K900 are included in this report.

The certification emission-data and fuel economy data of the above-mentioned vehicles used to get the following fuel economy values were tested in accordance with applicable exhaust emission test procedures and complied with applicable 2017 exhaust emission standards as defined 40 CFR §86.

II. Projected Average and Required Fuel Economy

1. Projected Average Fuel Economy

- PC : **38.9** MPG (without A/C efficiency & off-cycle credits)

- PC : **39.6** MPG (with A/C efficiency & off-cycle credits)

2. Projected Required Fuel Economy

- PC : **39.2** MPG

At this point in time and based on available best present information, the above projections represent the KIA MOTORS CORPORATION (KMC) average and required fuel economy for the 2017 model year for the purpose of the Act.

II. Projected Average and Required Fuel Economy

- Projected Required Fuel Economy

Model Type Description	Carline	Basic Engine (disp)	Drive	T/M class	Base Tire	Doors	Projected sales	Track width FR (inch)	Track width RR (inch)	Average Track width (inch)	Wheelbase (inch)	footprint (sqr feet)	Target standard	ETW	IWC
Rio 1.6 AT ISG	Rio ECO	1.6	FWD	SA6	P185/65R15	5	486	60.0	60.0	60.0	101.2	42.2	42.46	2,875	2,750
	Rio ECO	1.6	FWD	SA6	P185/65R15	4	486	60.0	60.0	60.0	101.2	42.2	42.46	2,875	2,750
Rio 1.6 AT	Rio	1.6	FWD	SA6	P185/65R15	5	5,832	60.0	60.0	60.0	101.2	42.2	42.46	2,875	2,750
	Rio	1.6	FWD	SA6	205/45R17	5	243	59.5	59.5	59.5	101.2	41.8	42.84	2,875	2,750
	Rio	1.6	FWD	SA6	P185/65R15	4	15,552	60.0	60.0	60.0	101.2	42.2	42.46	2,875	2,750
Rio 1.6 MT	Rio	1.6	FWD	M6	P185/65R15	4	1,701	60.0	60.0	60.0	101.2	42.2	42.46	2,750	2,750
Forte 2.0 AT	Forte	2.0	FWD	SA6	P215/45R17	4	7,800	61.5	62.0	61.8	106.3	45.6	39.54	3,250	3,000
	Forte	2.0	FWD	SA6	P215/45R17	4	3,000	61.5	62.0	61.8	106.3	45.6	39.54	3,250	3,000
	Forte	2.0	FWD	SA6	195/65R15	4	30,000	61.5	62.0	61.8	106.3	45.6	39.54	3,125	3,000
Forte 2.0 AT SFI	Forte	2.0	FWD	SA6	205/55R16	4	36,000	61.5	62.0	61.8	106.3	45.6	39.54	3,125	3,000
	Forte	2.0	FWD	SA6	195/65R15	4	20,400	61.5	62.0	61.8	106.3	45.6	39.54	3,125	3,000
	Forte	2.0	FWD	SA6	205/55R16	4	16,800	61.5	62.0	61.8	106.3	45.6	39.54	3,125	3,000
Forte 2.0 MT SFI	Forte	2.0	FWD	M6	195/65R15	4	6,000	61.5	62.0	61.8	106.3	45.6	39.54	3,125	3,000
Forte 5 2.0 AT	Forte5	2.0	FWD	SA6	215/45R17	5	2,400	61.5	62.0	61.8	106.3	45.6	39.54	3,250	3,000
	Forte5	2.0	FWD	SA6	195/65R15, 205/55R16	5	7,900	61.5	62.0	61.8	106.3	45.6	39.54	3,250	3,000
Forte Koup 2.0 AT	Forte Koup	2.0	FWD	SA6	205/55R16	2	2,850	61.5	62.0	61.8	106.3	45.6	39.54	3,250	3,000
Forte Koup 1.6 MT	Forte Koup	1.6	FWD	SA6	P225/40R18	2	360	61.5	62.0	61.8	106.3	45.6	39.54	3,250	3,000
Soul 1.6 AT	Soul	1.6	FWD	SA6	205/60R16	5	47,000	62.0	62.5	62.2	101.2	43.7	41.12	3,125	3,000
Soul 1.6 MT	Soul	1.6	FWD	M6	205/60R16	5	942	62.0	62.5	62.2	101.2	43.7	41.12	3,125	3,000
Niro FE	Niro FE	1.6	FWD	AM6	205/55R16	5	2,430	61.6	62.2	61.9	106.3	45.7	39.46	3,250	3,000
	Soul	2.0	FWD	SA6	215/55R17	5	11,510	61.7	62.2	62.0	101.2	43.6	41.21	3,250	3,000
Soul 2.0 GDI	Soul	2.0	FWD	SA6	215/55R17	5	23,010	61.7	62.2	62.0	101.2	43.6	41.21	3,250	3,000
	Soul	2.0	FWD	SA6	235/45R18	5	2,300	61.4	61.9	61.6	101.2	43.3	41.47	3,375	3,500
	Soul	2.0	FWD	SA6	235/45R18	5	6,900	61.4	61.9	61.6	101.2	43.3	41.47	3,375	3,500
Soul 1.6T GDI	Soul	1.6	FWD	AM7	235/45R18	5	10,350	61.4	61.9	61.6	101.2	43.3	41.47	3,375	3,500
Soul Electric	Soul Electric	EV	N/A	OT	205/60R16	5	3,450	62.0	62.5	62.2	101.2	43.7	41.12	3,625	3,500
Forte 5 1.6 DCT	Forte5	1.6	FWD	AM7	P225/40R18	5	960	61.5	62.0	61.8	106.3	45.6	39.54	3,375	3,500
Forte 5 1.6 MT	Forte5	1.6	FWD	M6	P225/40R18	5	200	61.5	62.0	61.8	106.3	45.6	39.54	3,375	3,500
Forte Koup 1.6 DCT	Forte Koup	1.6	FWD	AM7	P225/40R18	2	1,570	61.5	62.0	61.8	106.3	45.6	39.54	3,375	3,500
Niro	Niro	1.6	FWD	AM6	205/55R16	5	15,820	61.6	62.2	61.9	106.3	45.7	39.46	3,500	3,500
Niro Touring	Niro Touring	1.6	FWD	AM6	225/45R 18	5	6,080	61.2	61.8	61.5	106.3	45.4	39.7	3,625	3,500
Optima 1.6	Optima	1.6	FWD	AM7	205/65R16	4	3,382	63.5	63.8	63.6	110.4	48.8	37.13	3,500	3,500
Optima 2.4 FE	Optima FE	2.4	FWD	SA6	P205/55R16	4	21,105	63.5	63.8	63.6	110.4	48.8	37.13	3,500	3,500
	Optima FE	2.4	FWD	SA6	P205/55R16	4	11,116	63.5	63.8	63.6	110.4	48.8	37.13	3,500	3,500
Optima 2.4	Optima	2.4	FWD	SA6	215/55R17	4	18,168	63.1	63.3	63.2	110.4	48.5	37.34	3,625	3,500
	Optima	2.4	FWD	SA6	215/55R17	4	9,570	63.1	63.3	63.2	110.4	48.5	37.34	3,625	3,500
Sportage 2.4 FWD	Sportage FWD	2.4	FWD	SA6	225/55R18	SUV	9,275	63.5	64.0	63.8	105.1	46.6	38.75	3,750	3,500
	Sportage FWD	2.4	FWD	SA6	225/55R18	SUV	3,975	63.5	64.0	63.8	105.1	46.6	38.75	3,750	3,500
Sportage FE 2.4 FWD	Sportage FE FWD	2.4	FWD	SA6	225/60R17	SUV	25,150	63.5	64.0	63.8	105.1	46.6	38.75	3,625	3,500
	Sportage FE FWD	2.4	FWD	SA6	225/60R17	SUV	2,794	63.5	64.0	63.8	105.1	46.6	38.75	3,625	3,500
Sportage 2.0T FWD	Sportage FWD	2.0	FWD	SA6	245/45R19	SUV	4,417	63.3	63.8	63.6	105.1	46.4	38.9	4,000	4,000
Optima 2.0	Optima	2.0	FWD	SA6	235/45R18	4	6,663	62.9	63.1	63.0	110.4	48.3	37.48	3,875	4,000
Optima PHEV	Optima plug-in hybrid	2.0	FWD	AM6	215/55 R17	4	2,500	63.1	63.1	63.1	110.4	48.4	37.41	4,000	4,000
Optima HEV	Optima Hybrid	2.0	FWD	AM6	P205/65R16	4	4,100	63.5	63.8	63.6	110.4	48.8	37.13	3,750	3,500
	Optima Hybrid	2.0	FWD	AM6	P215/55R17	4	3,400	63.1	63.3	63.2	110.4	48.5	37.34	3,875	4,000
Sorento 2.0 AWD	Sorento AWD	2.0	AWD	SA6	235/60R18	SUV	2,830	64.1	64.5	64.3	109.5	48.9	37.06	4,250	4,000
	Sorento FWD	2.0	FWD	SA6	235/60R18	SUV	2,310	64.1	64.5	64.3	109.5	48.9	37.06	4,250	4,000
Sorento 2.4 AWD	Sorento AWD	2.4	AWD	SA6	235/65R17	SUV	11,213	64.3	64.7	64.5	109.5	49.0	36.99	4,250	4,000
	Sorento FWD	2.4	FWD	SA6	235/65R17	SUV	29,673	64.3	64.7	64.5	109.5	49.0	36.99	4,000	4,000
Cadenza 3.3 AT	Cadenza	3.3	FWD	SA8	245/45R18	4	8,500	63.3	63.6	63.4	112.4	49.5	36.64	4,000	4,000
	Cadenza	3.3	FWD	SA8	245/40R19	4	8,500	63.1	63.4	63.2	112.4	49.3	36.78	4,000	4,000
K900 3.8 RWD	K900	3.8	RWD	SA8	P245/50R18	4	635	63.6	63.6	63.6	120.0	53.0	34.38	4,750	4,500
	K900	5.0	RWD	SA8	P235/45R19(HANKOOK)	4	190	63.6	64.3	64.0	120.0	53.3	34.19	5,000	5,000
K900 5.0 RWD	K900	5.0	RWD	SA8	P235/45R19(CONTINENTAL)	4	130	63.6	64.3	64.0	120.0	53.3	34.19	5,000	5,000

Projected Required	39.2
Total Sales Volume	479,928

$$CAFE_{required} = \frac{\sum_i PRODUCTION_i}{\sum_i TARGET_i}$$

III. Projected Average and Required Fuel Economy

- Projected Average Fuel Economy (without A/C efficiency & off-cycle credits)

Projected Average	38.9
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Model Type Description	Carline	Basic Engine (disp)	Drive	T/M class	Base Tire	Doors	Projected sales	City_FE	Hwy_FE	Combined FE	IWC	Model Type Comb.FE	Model Type Vol
Rio 1.6 AT ISG	Rio ECO	1.6	FWD	SA6	P185/65R15	5	486	35.4	52.0	41.3384	2,750	41.7	972
	Rio ECO	1.6	FWD	SA6	P185/65R15	4	486	36.0	53.3	42.1575	2,750		
Rio 1.6 AT	Rio	1.6	FWD	SA6	P185/65R15	5	5,832	35.6	54.0	42.0472	2,750	41.0	21,627
	Rio	1.6	FWD	SA6	205/45R17	5	243	35.6	54.0	42.0472	2,750		
Rio 1.6 MT	Rio	1.6	FWD	SA6	P185/65R15	4	15,552	34.3	52.4	40.6128	2,750	41.6	1,701
	Rio	1.6	FWD	M6	P185/65R15	4	1,701	35.2	53.4	41.5766	2,750		
Forte 2.0 AT	Forte	2.0	FWD	SA6	P215/45R17	4	7,800	32.3	48.5	38.0138	3,000	38.0	10,800
	Forte	2.0	FWD	SA6	P215/45R17	4	3,000	32.2	48.3	37.8824	3,000		
Forte 2.0 AT SFI	Forte	2.0	FWD	SA6	195/65R15	4	30,000	39.2	54.5	44.8682	3,000	43.9	103,200
	Forte	2.0	FWD	SA6	205/55R16	4	36,000	39.0	56.6	45.3451	3,000		
	Forte	2.0	FWD	SA6	195/65R15	4	20,400	34.8	54.6	41.5863	3,000		
	Forte	2.0	FWD	SA6	205/55R16	4	16,800	35.4	54.4	42.0013	3,000		
Forte 2.0 MT SFI	Forte	2.0	FWD	M6	195/65R15	4	6,000	32.3	50.0	38.4204	3,000	38.4	6,000
Forte 5 2.0 AT	Forte5	2.0	FWD	SA6	P215/45R17	5	2,400	32.1	47.3	37.5267	3,000	38.0	10,300
	Forte5	2.0	FWD	SA6	195/65R15, 205/55R16	5	7,900	32.2	49.1	38.1015	3,000		
Forte Koup 2.0 AT	Forte Koup	2.0	FWD	SA6	195/65R15	2	2,850	32.1	48.0	37.7231	3,000	37.7	2,850
Forte Koup 1.6 MT	Forte Koup	1.6	FWD	SA6	P225/40R18	2	360	29.7	42.2	34.2677	3,000	34.3	360
Soul 1.6 AT	Soul	1.6	FWD	SA6	205/60R16	5	47,000	32.2	43.0	36.3031	3,000	36.3	47,000
Soul 1.6 MT	Soul	1.6	FWD	M6	205/60R16	5	942	31.4	43.0	35.7385	3,000	35.7	942
Niro FE	Niro FE	1.6	FWD	AM6	205/55R16	5	2,430	71.0	68.9	70.0394	3,000	70.0	2,430
Soul 2.0 GDI	Soul	2.0	FWD	SA6	215/55R17	5	11,510	31.0	42.8	35.3908	3,000	36.0	43,720
	Soul	2.0	FWD	SA6	215/55R17	5	23,010	32.2	43.5	36.4623	3,000		
	Soul	2.0	FWD	SA6	235/45R18	5	2,300	30.4	42.6	34.8973	3,500		
	Soul	2.0	FWD	SA6	235/45R18	5	6,900	31.5	42.8	35.7471	3,500		
Soul 1.6T GDI	Soul	1.6	FWD	AM7	235/45R18	5	10,350	33.4	43.9	37.4285	3,500	37.4	10,350
Soul Electric	Soul Electric	EV	N/A	OT	205/60R16	5	3,450	416.0	320.0	366.5198	3,500	366.5	3,450
Forte 5 1.6 DCT	Forte5	1.6	FWD	AM7	P225/40R18	5	960	32.2	42.6	36.1741	3,500	36.2	960
Forte 5 1.6 MT	Forte5	1.6	FWD	M6	P225/40R18	5	200	29.3	41.4	33.7372	3,500	33.7	200
Forte Koup 1.6 DCT	Forte Koup	1.6	FWD	AM7	P225/40R18	2	1,570	31.6	45.5	36.6365	3,500	36.6	1,570
Niro	Niro	1.6	FWD	AM6	205/55R16	5	15,820	66.2	65.3	65.7919	3,500	65.8	15,820
Niro Touring	Niro Touring	1.6	FWD	AM6	225/45R 18	5	6,080	60.0	58.4	59.2693	3,500	59.3	6,080
Optima 1.6	Optima	1.6	FWD	AM7	205/65R16	4	3,382	36.3	54.8	42.8024	3,500	42.8	3,382
Optima 2.4 FE	Optima FE	2.4	FWD	SA6	P205/55R16	4	21,105	32.9	52.5	39.5433	3,500	39.1	32,221
	Optima FE	2.4	FWD	SA6	P205/55R16	4	11,116	31.7	51.3	38.2818	3,500		
Optima 2.4	Optima	2.4	FWD	SA6	215/55R17	4	18,168	31.6	50.1	37.8973	3,500	37.5	27,738
	Optima	2.4	FWD	SA6	215/55R17	4	9,570	30.3	49.3	36.6574	3,500		
Sportage 2.4 FWD	Sportage FWD	2.4	FWD	SA6	225/55R18	SUV	9,275	28.4	41.1	32.9869	3,500	33.2	13,250
	Sportage FWD	2.4	FWD	SA6	225/55R18	SUV	3,975	29.1	41.8	33.7087	3,500		
Sportage FE 2.4 FWD	Sportage FE FWD	2.4	FWD	SA6	225/60R17	SUV	25,150	29.2	43.0	34.1288	3,500	34.0	27,944
	Sportage FE FWD	2.4	FWD	SA6	225/60R17	SUV	2,794	28.7	40.8	33.1201	3,500		
Sportage 2.0T FWD	Sportage FWD	2.0	FWD	SA6	245/45R19	SUV	4,417	26.2	39.0	30.7401	4,000	30.7	4,417
Optima 2.0	Optima	2.0	FWD	SA6	235/45R18	4	6,663	27.4	44.5	33.1287	4,000	33.1	6,663
Optima PHEV	Optima plug-in hybrid	2.0	FWD	AM6	215/55 R17	4	2,500	156.1	95.5	121.4267	4,000	121.4	2,500
	Optima Hybrid	2.0	FWD	AM6	P205/65R16	4	4,100	55.4	62.8	58.5021	3,500	58.2	7,500
Optima HEV	Optima Hybrid	2.0	FWD	AM6	P215/55R17	4	3,400	54.4	62.7	57.8458	4,000	58.2	7,500
	Optima Hybrid	2.0	FWD	AM6	P215/55R17	4	3,400	54.4	62.7	57.8458	4,000		
Sorento 2.0 AWD	Sorento AWD	2.0	AWD	SA6	235/60R18	SUV	2,830	24.3	35.9	28.4345	4,000	28.4	2,830
Sorento 2.0 FWD	Sorento FWD	2.0	FWD	SA6	235/60R18	SUV	2,310	25.3	38.3	29.8610	4,000	29.9	2,310
Sorento 2.4 AWD	Sorento AWD	2.4	AWD	SA6	235/65R17	SUV	11,213	26.0	35.6	29.5908	4,000	29.6	11,213
Sorento 2.4 FWD	Sorento FWD	2.4	FWD	SA6	235/65R17	SUV	29,673	26.8	40.4	31.5846	4,000	31.6	29,673
Cadenza 3.3 AT	Cadenza	3.3	FWD	SA8	245/45R18	4	8,500	25.9	39.4	30.6215	4,000	30.3	17,000
	Cadenza	3.3	FWD	SA8	245/40R19	4	8,500	25.4	38.7	30.0468	4,000		
K900 3.8 RWD	K900	3.8	RWD	SA8	P245/50R18	4	635	21.2	35.7	25.9414	4,500	25.9	635
K900 5.0 RWD	K900	5.0	RWD	SA8	P235/45R19(HANKOOK)	4	190	18.1	32.2	22.5419	5,000	22.6	320
	K900	5.0	RWD	SA8	P235/45R19(CONTINENTAL)	4	130	18.7	30.8	22.7158	5,000		

Average	38.9
ROUNDED Avg. comb.	38.4937
Multiplied Factor	1.006846631
'a'	1.440274693
C' FACTOR	0.0014
IW (Added Factor)	0.156398813
SF _{3Wc}	0.4551
FE _{3Wc}	39.9786
SF _{4ETW}	0.1117
FE _{4Wc}	32.2611

$$§600.510-12 : AFE_{adj} = AFE(((0.55 \times a \times c) + (0.45 \times c) + (0.5556 \times a) + 0.4487)/((0.55 \times a) + 0.45)) + IW$$

V. Off-cycle Credits

Model Type Description	Carline	Basic Engine (disp)	Drive	T/M class (Drive, type, gear)	Doors	Base Tire	Description	Projected sales	Off-cycle benefit per vehicle		VLM
									gpm	megagrams	
Rio 1.6 AT ISG	Rio ECO	1.6 FWD SA6	4	P185/65R15	5	P185/65R15	High efficiency light(low beam, high beam - 0.5)	486	0.5	47	195,264
	Rio ECO	1.6 FWD SA6	4	P185/65R15	4	P185/65R15	High efficiency light(low beam, high beam - 0.5)	486	0.5	47	195,264
Rio 1.6 AT	Rio	1.6 FWD SA6	5	P185/65R15	5	P185/65R15	High efficiency light(low beam, high beam - 0.5)	5,832	0.5	569	195,264
	Rio	1.6 FWD SA6	5	205/45R17	5	205/45R17	High efficiency light(low beam LED, high beam, rear side marker LED, parking position - 0.8); Active seat ventilation; Glazing	243	0.7	33	195,264
Rio 1.6 MT	Rio	1.6 FWD SA6	4	P185/65R15	4	P185/65R15	High efficiency light(low beam, high beam - 0.5)	15,552	0.5	1,518	195,264
	Rio	1.6 FWD M6	4	P185/65R15	4	P185/65R15	High efficiency light(low beam, high beam - 0.5)	1,701	0.5	166	195,264
Forte 2.0 AT	Forte	2.0 FWD SA6	4	P215/45R17	4	P215/45R17	High efficiency light(low beam, high beam - 0.5); Glazing	5,460	0.7	746	195,264
	Forte	2.0 FWD SA6	4	P215/45R17	4	P215/45R17	High efficiency light(low beam, high beam - 0.5); Active seat ventilation; Glazing	1,560	1.7	518	195,264
	Forte	2.0 FWD SA6	4	P215/45R17	4	P215/45R17	High efficiency light(low beam HID, high beam - 0.8); Active seat ventilation; Glazing	780	2.0	305	195,264
	Forte	2.0 FWD SA6	4	P215/45R17	4	P215/45R17	High efficiency light(low beam, high beam - 0.5); Glazing	2,100	0.7	287	195,264
	Forte	2.0 FWD SA6	4	P215/45R17	4	P215/45R17	High efficiency light(low beam, high beam - 0.5); Active seat ventilation; Glazing	600	1.7	199	195,264
Forte 2.0 AT SFI	Forte	2.0 FWD SA6	4	195/65R15	4	195/65R15	High efficiency light(low beam, high beam - 0.5); Glazing	30,000	0.7	4,101	195,264
	Forte	2.0 FWD SA6	4	205/55R16	4	205/55R16	High efficiency light(low beam, high beam - 0.5); Glazing	36,000	0.7	4,921	195,264
	Forte	2.0 FWD SA6	4	195/65R15	4	195/65R15	High efficiency light(low beam, high beam - 0.5); Glazing	20,400	0.7	2,788	195,264
Forte 2.0 MT SFI	Forte	2.0 FWD SA6	4	205/55R16	4	205/55R16	High efficiency light(low beam, high beam - 0.5); Glazing	16,800	0.7	2,296	195,264
	Forte	2.0 FWD M6	4	195/65R15	4	195/65R15	High efficiency light(low beam, high beam - 0.5); Glazing	6,000	0.7	820	195,264
	Forte5	2.0 FWD SA6	5	P215/45R17	5	P215/45R17	High efficiency light(low beam, high beam - 0.5); Glazing	1,920	0.7	262	195,264
Forte 5 2.0 AT	Forte5	2.0 FWD SA6	5	P215/45R17	5	P215/45R17	High efficiency light(low beam, high beam - 0.5); Active seat ventilation; Glazing	480	1.7	159	195,264
	Forte5	2.0 FWD SA6	5	195/65R15, 205/55R16	5	195/65R15, 205/55R16	High efficiency light(low beam, high beam - 0.5); Glazing	7,900	0.7	1,080	195,264
	Forte5	2.0 FWD SA6	5	195/65R15, 205/55R16	5	195/65R15, 205/55R16	High efficiency light(low beam, high beam - 0.5); Glazing	2,280	0.7	312	195,264
Forte Koup 2.0 AT	Forte Koup	2.0 FWD SA6	2	205/55R16	2	205/55R16	High efficiency light(low beam, high beam - 0.5); Glazing	570	1.7	189	195,264
	Forte Koup	2.0 FWD SA6	2	205/55R16	2	205/55R16	High efficiency light(low beam, high beam - 0.5); Active seat ventilation; Glazing	2,280	0.7	312	195,264
Forte Koup 1.6 MT	Forte Koup	1.6 FWD SA6	2	P225/40R18	2	P225/40R18	High efficiency light(low beam, high beam, parking/position - 0.6); Glazing	288	0.8	45	195,264
	Forte Koup	1.6 FWD SA6	2	P225/40R18	2	P225/40R18	High efficiency light(low beam, high beam - 0.5); Active seat ventilation; Glazing	72	1.7	24	195,264
Soul 1.6 AT	Soul	1.6 FWD SA6	5	205/60R16	5	205/60R16	High efficiency light(low beam, high beam - 0.5); Glazing	47,000	0.9	8,260	195,264
Soul 1.6 MT	Soul	1.6 FWD M6	5	205/60R16	5	205/60R16	High efficiency light(low beam, high beam - 0.5); Glazing	942	0.9	166	195,264
Niro FE	Niro FE	1.6 FWD AM6	5	205/55R16	5	205/55R16	Active engine warm-up, High efficiency exterior lights(position, front&rear side markers), grill shutter, active T/M warm-up, glazing	2,430	3.5	1,661	195,264
	Niro FE	2.0 FWD SA6	5	215/55R17	5	215/55R17	High efficiency light(low beam, high beam); Glazing	9,208	0.9	1,618	195,264
Soul 2.0 GDI	Soul	2.0 FWD SA6	5	215/55R17	5	215/55R17	High efficiency light(low beam, high beam, parking/position LED, tail LED, rear side marker); Active seat ventilation; Glazing	2,302	2.4	1,079	195,264
	Soul	2.0 FWD SA6	5	215/55R17	5	215/55R17	High efficiency light(low beam, high beam); Glazing	18,408	0.9	3,235	195,264
	Soul	2.0 FWD SA6	5	215/55R17	5	215/55R17	High efficiency light(low beam, high beam, parking/position LED, tail LED, rear side marker); Active seat ventilation; Glazing	4,602	2.4	2,157	195,264
	Soul	2.0 FWD SA6	5	235/45R18	5	235/45R18	High efficiency light(low beam, high beam); Glazing	1,840	0.9	323	195,264
	Soul	2.0 FWD SA6	5	235/45R18	5	235/45R18	High efficiency light(low beam, high beam, parking/position LED, tail LED, rear side marker); Active seat ventilation; Glazing	460	2.4	216	195,264
	Soul	2.0 FWD SA6	5	235/45R18	5	235/45R18	High efficiency light(low beam, high beam); Glazing	5,520	0.9	970	195,264
	Soul	2.0 FWD SA6	5	235/45R18	5	235/45R18	High efficiency light(low beam, high beam, parking/position LED, tail LED, rear side marker); Active seat ventilation; Glazing	1,380	2.4	647	195,264
Soul 1.6T GDI	Soul	1.6 FWD AM7	5	235/45R18	5	235/45R18	High efficiency light(low beam, high beam - 0.5); Glazing	10,350	0.9	1,819	195,264
Soul Electric	Soul Electric	EV N/A	OT	5	205/60R16	5	High efficiency light(low beam, high beam, parking/position, front turn signal, tail, rear side marker); Glazing	1,380	1.3	350	195,264
	Soul Electric	EV N/A	OT	5	205/60R16	5	High efficiency light(low beam, high beam, parking/position, front turn signal, tail, rear side marker); Active seat ventilation; Glazing	2,070	2.3	930	195,264
Forte 5 1.6 DCT	Forte5	1.6 FWD AM7	5	P225/40R18	5	P225/40R18	High efficiency light(low beam, high beam - 0.5); Glazing	672	0.7	92	195,264
	Forte5	1.6 FWD AM7	5	P225/40R18	5	P225/40R18	High efficiency light(low beam, high beam - 0.5); Active seat ventilation; Glazing	192	1.7	64	195,264
	Forte5	1.6 FWD AM7	5	P225/40R18	5	P225/40R18	High efficiency light(low beam HID, high beam - 0.8); Active seat ventilation; Glazing	96	2.0	37	195,264
Forte 5 1.6 MT	Forte5	1.6 FWD M6	5	P225/40R18	5	P225/40R18	High efficiency light(low beam, high beam - 0.5); Glazing	140	0.7	19	195,264
	Forte5	1.6 FWD AM7	5	P225/40R18	5	P225/40R18	High efficiency light(low beam, high beam - 0.5); Active seat ventilation; Glazing	40	1.7	13	195,264
	Forte5	1.6 FWD AM7	5	P225/40R18	5	P225/40R18	High efficiency light(low beam HID, high beam - 0.8); Active seat ventilation; Glazing	20	2.0	8	195,264
Forte Koup 1.6 DCT	Forte Koup	1.6 FWD AM7	2	P225/40R18	2	P225/40R18	High efficiency light(low beam, high beam, parking/position - 0.6); Glazing	1,256	0.8	196	195,264
	Forte Koup	1.6 FWD AM7	2	P225/40R18	2	P225/40R18	High efficiency light(low beam, high beam - 0.5); Active seat ventilation; Glazing	314	1.7	104	195,264
Niro	Niro	1.6 FWD AM6	5	205/55R16	5	205/55R16	Active engine warm-up, High efficiency exterior lights(position, front&rear side markers), grill shutter, active T/M warm-up, glazing	15,820	3.5	10,812	195,264
Niro Touring	Niro Touring	1.6 FWD AM6	5	225/45R18	5	225/45R18	Active engine warm-up, High efficiency exterior lights(position, front&rear side markers), grill shutter, active T/M warm-up, glazing	6,080	3.5	4,155	195,264
Optima 1.6	Optima	1.6 FWD AM7	4	205/65R16	4	205/65R16	High efficiency light(low beam, high beam - 0.5); Glazing	3,382	0.7	462	195,264
Optima 2.4 FE	Optima FE	2.4 FWD SA6	4	P205/55R16	4	P205/55R16	High efficiency light(low beam, high beam - 0.5); Active transmission warm-up; Glazing	21,105	2.2	9,066	195,264
	Optima FE	2.4 FWD SA6	4	P205/55R16	4	P205/55R16	High efficiency light(low beam, high beam - 0.5); Active transmission warm-up; Glazing	11,116	2.2	4,775	195,264
Optima 2.4	Optima	2.4 FWD SA6	4	215/55R17	4	215/55R17	High efficiency light(low beam HID, high beam, parking position LED - 0.8); Active transmission warm-up; Glazing	11,809	2.5	5,765	195,264
	Optima	2.4 FWD SA6	4	215/55R17	4	215/55R17	High efficiency light(low beam HID, high beam, parking position LED - 0.8); Active transmission warm-up; Active Seat Ventilation; Glazing	6,359	3.5	4,346	195,264
	Optima	2.4 FWD SA6	4	215/55R17	4	215/55R17	High efficiency light(low beam HID, high beam, parking position LED - 0.8); Active transmission warm-up; Glazing	6,221	2.5	3,037	195,264
	Optima	2.4 FWD SA6	4	215/55R17	4	215/55R17	High efficiency light(low beam HID, high beam, parking position LED - 0.8); Active transmission warm-up; Active Seat Ventilation; Glazing	3,349	3.5	2,289	195,264
Sportage 2.4 FWD	Sportage FWD	2.4 FWD SA6	SUV	225/55R18	SUV	225/55R18	High efficiency light(low beam, high beam, rear side marker - 0.6); Glazing	8,375	0.8	1,308	195,264
	Sportage FWD	2.4 FWD SA6	SUV	225/55R18	SUV	225/55R18	High efficiency light(low beam, high beam, rear side marker - 0.6); Active seat ventilation; Glazing	900	1.8	316	195,264
	Sportage FWD	2.4 FWD SA6	SUV	225/55R18	SUV	225/55R18	High efficiency light(low beam, high beam, rear side marker - 0.6); Glazing	3,500	0.8	547	195,264
	Sportage FWD	2.4 FWD SA6	SUV	225/55R18	SUV	225/55R18	High efficiency light(low beam, high beam, rear side marker - 0.6); Active seat ventilation; Glazing	475	1.8	167	195,264
	Sportage FE FWD	2.4 FWD SA6	SUV	225/60R17	SUV	225/60R17	High efficiency light(low beam, high beam, rear side marker - 0.6); Glazing	22,500	0.8	3,515	195,264
Sportage FE 2.4 FWD	Sportage FE FWD	2.4 FWD SA6	SUV	225/60R17	SUV	225/60R17	High efficiency light(low beam, high beam, rear side marker - 0.6); Active seat ventilation; Glazing	2,650	1.8	931	195,264
	Sportage FE FWD	2.4 FWD SA6	SUV	225/60R17	SUV	225/60R17	High efficiency light(low beam, high beam, rear side marker - 0.6); Glazing	2,500	0.8	391	195,264
	Sportage FE FWD	2.4 FWD SA6	SUV	225/60R17	SUV	225/60R17	High efficiency light(low beam, high beam, rear side marker - 0.6); Active seat ventilation; Glazing	294	1.8	103	195,264
Sportage 2.0T FWD	Sportage FWD	2.0 FWD SA6	SUV	245/45R19	SUV	245/45R19	High efficiency light(low beam, high beam, parking/position, front side marker, rear side marker - 0.8); Glazing	2,200	1.2	515	195,264
	Sportage FWD	2.0 FWD SA6	SUV	245/45R19	SUV	245/45R19	High efficiency light(low beam, high beam, parking/position, front side marker, rear side marker - 0.8); Active seat ventilation; Glazing	2,217	2.2	952	195,264
Optima 2.0	Optima	2.0 FWD SA6	4	235/45R18	4	235/45R18	High efficiency light(low beam HID, high beam, parking position - 0.8); Glazing	1,998	1.0	390	195,264
	Optima	2.0 FWD SA6	4	235/45R18	4	235/45R18	High efficiency light(low beam HID, high beam, parking position - 0.8); Active Seat Ventilation; Glazing	4,665	2.0	1,822	195,264
Optima PHEV	Optima plug-in hybrid	2.0 FWD AM6	4	215/55 R17	4	215/55 R17	High efficiency exterior lights(position, front&rear side markers), grill shutter, active T/M warm-up, glazing	2,500	2.0	976	195,264
Optima HEV	Optima Hybrid	2.0 FWD AM6	4	P205/55R16	4	P205/55R16	High efficiency exterior lights(position, front&rear side markers), grill shutter, active T/M warm-up, glazing	4,100	2.0	1,601	195,264
	Optima Hybrid	2.0 FWD AM6	4	P215/55R17	4	P215/55R17	High efficiency exterior lights(position, front&rear side markers), grill shutter, active T/M warm-up, glazing	3,400	2.0	1,328	195,264
Sorento 2.0 AWD	Sorento AWD	2.0 AWD SA6	SUV	235/60R18	SUV	235/60R18	High efficiency light(low beam, high beam, parking/position, front side marker, rear side marker - 0.8); Active transmission warm-up; Glazing	1,840	2.6	934	195,264
	Sorento AWD	2.0 AWD SA6	SUV	235/60R18	SUV	235/60R18	High efficiency light(low beam, high beam, parking/position, front side marker, rear side marker - 0.8); Active transmission warm-up; Active seat ventilation; Glazing	425	3.8	315	195,264
	Sorento AWD	2.0 AWD SA6	SUV	235/60R18	SUV	235/60R18	High efficiency light(low beam LED, high beam, parking/position, front side marker, rear side marker - 1.0); Active transmission warm-up; Active seat ventilation; Glazing	565	4.0	441	195,264
Sorento 2.0 FWD	Sorento FWD	2.0 FWD SA6	SUV	235/60R18	SUV	235/60R18	High efficiency light(low beam, high beam, parking/position, front side marker, rear side marker - 0.8); Active transmission warm-up; Glazing	1,502	2.6	763	195,264
	Sorento FWD	2.0 FWD SA6	SUV	235/60R18	SUV	235/60R18	High efficiency light(low beam, high beam, parking/position, front side marker, rear side marker - 0.8); Active transmission warm-up; Active seat ventilation; Glazing	347	3.8	257	195,264
	Sorento FWD	2.0 FWD SA6	SUV	235/60R18	SUV	235/60R18	High efficiency light(low beam LED, high beam, parking/position, front side marker, rear side marker - 1.0); Active transmission warm-up; Active seat ventilation; Glazing	461	4.0	360	195,264

Sorento 2.4 AWD	Sorento AWD	2.4	AWD	SA6	SUV	235/65R17	High efficiency light(low beam, high beam, parking/position, front side marker, rear side marker - 0.8); Active transmission warm-up; Glazing	11,213	2.6	5,693	195,264
Sorento 2.4 FWD	Sorento FWD	2.4	FWD	SA6	SUV	235/65R17	High efficiency light(low beam, high beam, parking/position, front side marker, rear side marker - 0.8); Active transmission warm-up; Glazing	29,673	2.6	15,065	195,264
Cadenza 3.3 AT	Cadenza	3.3	FWD	SA8	4	245/45R18	High efficiency light(low beam, high beam, front turn signal, tail, rear side marker - 0.8); Glazing	3,400	1.2	797	195,264
	Cadenza	3.3	FWD	SA8	4	245/45R18	High efficiency light(low beam HID, high beam, front turn signal, tail, rear side marker - 1.0); Active seat ventilation; Glazing	5,100	2.4	2,390	195,264
	Cadenza	3.3	FWD	SA8	4	245/40R19	High efficiency light(low beam, high beam, front turn signal, tail, rear side marker - 0.8); Glazing	3,400	1.2	797	195,264
	Cadenza	3.3	FWD	SA8	4	245/40R19	High efficiency light(low beam HID, high beam, front turn signal, tail, rear side marker - 1.0); Active seat ventilation; Glazing	5,100	2.4	2,390	195,264
K900 3.8 RWD	K900	3.8	RWD	SA8	4	P245/50R18	High efficiency light(low beam HID, high beam, front turn signal, front side marker, tail, rear turn signal, rear side marker - 1.1); Active seat ventilation; Glazing	635	2.5	310	195,264
K900 5.0 RWD	K900	5.0	RWD	SA8	4	P235/45R19(HANKOOK)	High efficiency light(low beam HID, high beam, front turn signal, front side marker, tail, rear turn signal, rear side marker - 1.1); Active aerodynamic improvements(Grill shutter - 0.2); Active transmission warm-up; Active seat ventilation; Glazing	190	4.2	156	195,264
	K900	5.0	RWD	SA8	4	P235/45R19(CONTINENTAL)	High efficiency light(low beam HID, high beam, front turn signal, front side marker, tail, rear turn signal, rear side marker - 1.1); Active aerodynamic improvements(Grill shutter - 0.2); Active transmission warm-up; Active seat ventilation; Glazing	130	4.2	107	195,264

OCCredit	135,857
Car volume	479,928
FCIV_{OC}(Gal/mi)	0.000163128

VLM 195,264

$$FCIV_{OC} (\text{gal/mi}) = \frac{(OCCredit \times 1,000,000)}{(VLM \times Production \times 0887)}$$

VI. Projected Average Fuel Economy Adjustment

Average MPG	39.6
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P4	MPG	38.9
P6	FCIV _{AC} (Gal/mi)	0.000317366
P7	FCIV _{OC} (Gal/mi)	0.000163128
N/A	FCIV _{PU} (Gal/mi)	0

$$\text{Average MPG} = \frac{1}{\left[\frac{1}{\text{MPG}} - (\text{FCIV}_{AC} + \text{FCIV}_{OC} + \text{FCIV}_{PU}) \right]}$$